REPORT ON ISOPODS FROM PERU, COLLECTED BY DR. R. E. COKER.

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In a collection of isopods sent by Dr. Robert E. Coker to the U. S. National Museum are three species, two of which are new to science. The third species, *Meinertia gaudichaudii* (Milne Edwards), has previously been recorded from Peruvian shores by Schiœdte and Meinert[a] in 1883. At an earlier date, 1877, Miers,[b] in a paper entitled On a collection of Crustacea, chiefly from South America, described a species of *Anilocra* from Peru, and also recorded *Cymothoa œstrum* as probably occurring there. These are the only marine isopods so far recorded from Peru.

MEINERTIA GAUDICHAUDII (Milne Edwards).

Cymothoa gaudichaudii Milne Edwards, Hist. Nat. Crust., vol. 3, 1840, p. 271.
Ceratothoa rapax Heller, Reise *Novara*, Crust., 1865, p. 146, fig. 17.
Ceratothoa gaudichaudii Schiœdte and Meinert, Nat. Tidsskr. (3), vol. 13, 1883, p. 335, pl. 13, figs. 11–15.
Meinertia gaudichaudii Stebbing, Hist. Crust., 1893, p. 345.—Richardson, Proc. U. S. Nat. Mus., vol. 21, 1899, p. 829; Ann. Mag. Nat. Hist. (7), vol. 4, 1899, p. 171; Proc. Wash. Acad. Sci., vol. 3, 1901, p. 568.—Stebbing, Willey's Zool. Results, 1902, p. 643.

Locality.—Mollendo, Peru. From the mouth of a large "Jurel."

Distribution.—From Mazatlan, Mexico, to Chile; Galapagos Islands. Also recorded from the Louisiade Archipelago, New Guinea.

Description.—Body elongate, nearly three times as long as broad, 16 mm.: 45 mm.

Head nearly twice as wide as long, 4 mm.: 7 mm., somewhat triangular in shape, with apex obtuse. The head is deeply set in the first thoracic segment, the narrow and acute antero-lateral angles of which extend half the length of the head. Eyes small, distinct, irregular in outline, but inclined to be square, and placed at the sides of the head, a little below the middle.

[a] Nat. Tidsskr. (3), vol. 13, 1883, p. 335, pl. 13, figs. 11–15.
[b] Proc. Zool. Soc. London, 1877, p. 671.

The first antennæ are composed of seven articles, the two first ones being almost fused; they extend just below the eye. The second antennæ are composed of nine articles and extend to the posterior margin of the head. The basal articles of the first pair of antennæ are adjacent on the ventral side. The articles of both pairs of antennæ are greatly dilated and flattened. The maxillipeds have a palp of two articles. The palp of the mandibles is composed of three articles, the terminal one being very slender and minute. The second maxillæ terminate in two lobes furnished with small hooks.

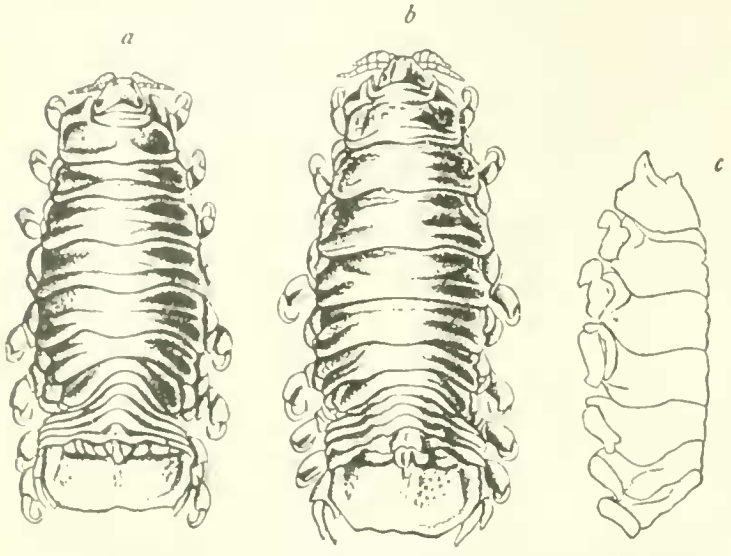

FIG. 1.—MEINERTIA GAUDICHAUDII (AFTER SCHIŒDTE AND MEINERT). *a*, ADULT FEMALE. *b*, ADULT FEMALE. *c*, LATERAL VIEW OF THORAX. (ENLARGED.)

The first segment of the thorax is longer than any of the others, being 6 mm. in length; the second and fifth segments are subequal, each being 4 mm. long; the third and fourth are each 5 mm. in length; the sixth segment is 3 mm. long; the seventh is 2 mm. long. The antero-lateral angles of the first segment are narrow and acute and are produced forward to about the middle of the head. The epimera are distinctly separated on all the six following segments. They are narrow, elongated plates, not extending quite to the posterior margin of the segments.

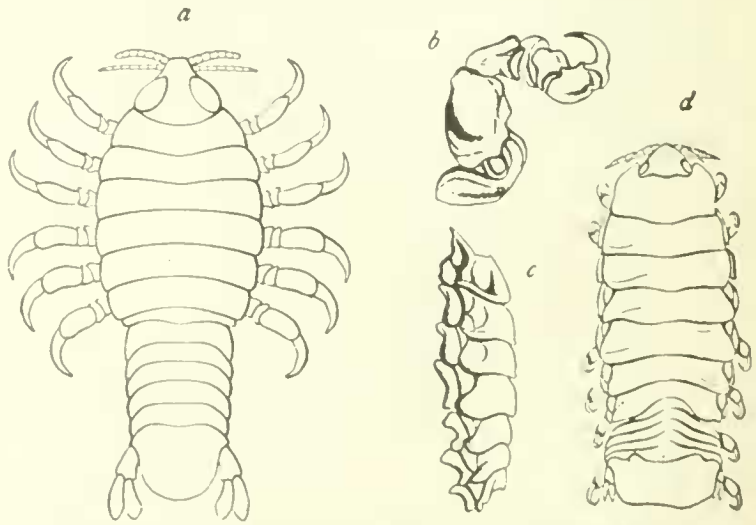

FIG. 2. MEINERTIA GAUDICHAUDII (AFTER SCHIŒDTE AND MEINERT). *a*, YOUNG OF FIRST STAGE. *b*, SECOND LEG OF ADULT MALE. *c*, LATERAL VIEW OF THORAX OF ADULT MALE. *d*, ADULT MALE. (ENLARGED.)

The abdomen is deeply set in the thorax. The first segment has the sides covered by the last thoracic segment. The four following segments are as wide as the seventh thoracic segment or wider. The sixth or terminal segment is trapezoidal, almost twice as wide as

long, 7 mm. by 13 mm. The post-lateral angles are rounded and the posterior margin straight. The uropoda are a little longer than the terminal abdominal segment. The inner branch is slightly longer than the outer branch. Both are narrow, elongate, and produced to acute and tapering extremities.

The legs are all prehensile, and terminate in short, stout dactyli. There is a high carina on the basis of the last four pairs of legs, the carina increasing in height from the fourth to the seventh pair, where it is extremely high.[a]

SPHÆROMA PERUVIANUM, new species.

Body oblong-ovate, covered with small granules, which on the abdomen become much more numerous and larger, more like tubercles.

Head large, wider than long, with the front produced in a small median point. Two small tubercles are situated close to the anterior margin, one on either side of the median line. The eyes are placed in the post-lateral angles and are large and composite. The first antennæ have the first article twice as long as wide; the second article is half as long as the first; the third is slender and is about as long as the first two taken together; the flagellum is composed of eleven articles and extends to the middle of the lateral margin of the first thoracic segment. The second antennæ, with a flagellum of nineteen articles, extend to the posterior margin of the second thoracic segment. The first maxilla has the inner lobe furnished with four plumose processes, the outer lobe with thirteen spines, eight long and five short ones. The mandible has the apical tooth trifid.

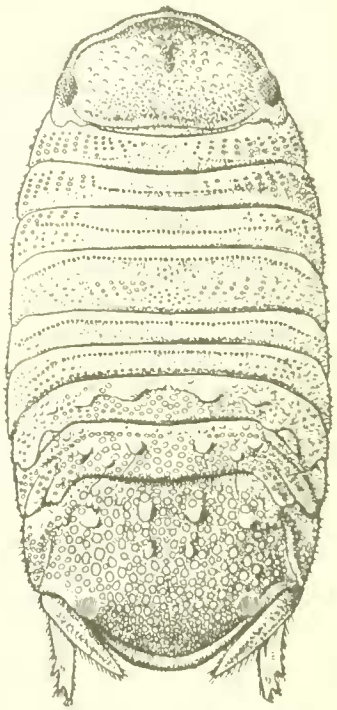

Fig. 3.—Sphæroma peruvianum. × 5¼. (Drawn by Miss V. Dandridge.)

The segments of the thorax, with the exception of the first, have a transverse tuberculated ridge. The seventh segment is furnished with four large tubercles in a transverse line, two on either side of the median line. The lateral parts of all the segments are produced in narrow triangular lobes, with rounded extremities.

The first segment of the abdomen has two large tubercles, one on either side of the median line, and two smaller ones on either side of these, making six in a transverse row. The terminal segment is broadly rounded posteriorly, with the apex slightly truncate. On the anterior portion are six prominent tubercles, four in a transverse

[a] For description of the male, female, and young of the first stage, see Schiœdte and Meinert, Nat. Tidsskr. (3), vol. 13, 1883, p. 335.

line, two on either side of the median line and two below this transverse row, one on either side of the median line. Close to the lateral margin on either side, and just below the middle of the segment, there is a thick bunch of hairs. The inner branch of the uropoda is pointed at the extremity and extends but little beyond the abdomen. The outer

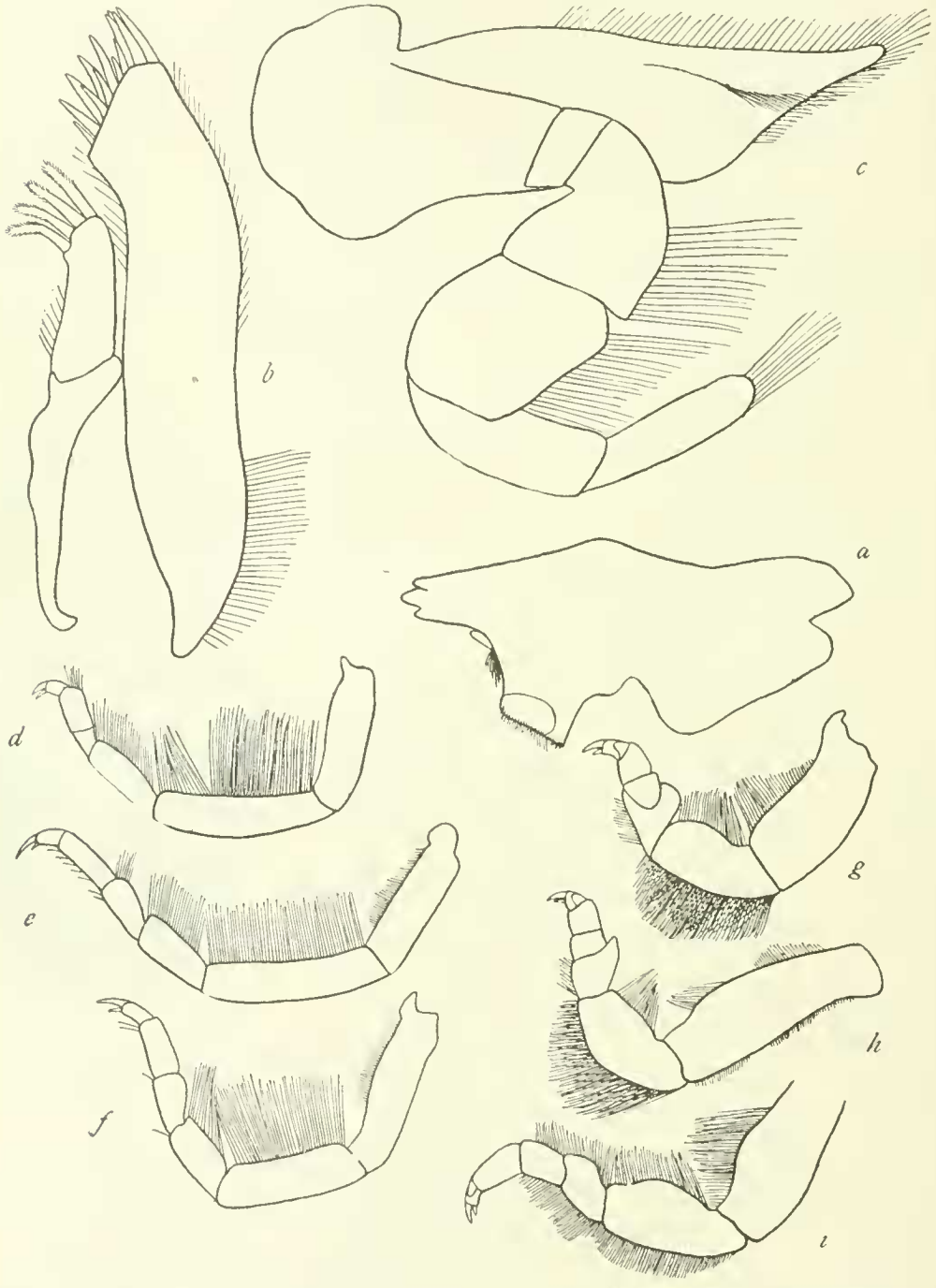

FIG. 4.—SPHÆROMA PERUVIANUM. *a*, MANDIBLE. ×23. *b*, FIRST MAXILLA. ×41. *c*, MAXILLIPED. ×41. *d*, FIRST LEG. *e*, SECOND LEG. *f*, THIRD LEG. *g*, FOURTH LEG. *h*, FIFTH LEG. *i*, SIXTH LEG. × 14½.

branch has two teeth on the outer margin, with only a feeble indication of a third. This branch is about as long as the inner branch and is also pointed at the extremity. The first three pairs of legs are long and slender, the last four short and stout. All are covered with long hairs.

A large number of specimens were collected in the oyster beds of Matapalo (near Capon), Peru. They were found in wood, in holes bored by them. The wood was completely honeycombed.

The following notes were supplied by Doctor Coker: "These small crustacea are economically significant, since they enter the green stems and roots of the mangroves, causing the wood to decay. The falling away of these destroyed branches and roots causes the loss of the many oysters attached to them. As I rarely observed the *Teredo* in the green stems, it seems that these crustacea are the most pernicious form and undoubtedly they prepare the way for the more rapidly destructive *Teredo.* (A nest of young included.) 'Piojos de Mangle' (Mangrove louse). Fishermen attribute to these the destruction of oysters that is really accomplished by the drill."

This species differs from the other wood-boring forms of this genus in the smaller number of teeth on the outer branch of the uropoda, in the shape of the terminal segment, in the difference in the arrangement of the tubercles, in the presence of a bunch of hairs on either side of the terminal segment, in the trifid apical tooth of the mandibles, in having four plumose processes on the inner lobe of the first maxillæ and thirteen on the outer lobe, and in the difference in the shape of the maxillipeds.

Type-specimen.—Cat. No. 40333, U.S.N.M.

ORBIMORPHUS, new genus.

Body of adult female, ovate.

Head large, with a narrow frontal border.

Lateral bosses present on the first four segments of the thorax. Lateral to these are the epimera, which extend the entire length of the lateral margin. Epimera are present on all the segments of the thorax and on the first four segments of the abdomen, but are not greatly developed. There are four pairs of double-branched pleopods, and a pair of double-branched uropoda.

The male has all the segments of the thorax distinct. Those of the abdomen are fused, but at the base of the abdominal segment is a notch on either side indicating a fused first segment. There are no uropods or pleopods.

Type of the genus.—Orbimorphus constrictus, new species.

This genus is very close to *Orbione* Bonnier but differs in having the pleural lamellæ or epimera of the thorax and abdomen of the female not so enormously developed. The male[a] also differs in having the first segment of the abdomen indicated by a notch on either side of the terminal segment.

[a] The male of *Orbione* Bonnier has not been described or figured, but I hope soon to give a figure of this form from a specimen of *O. peneí* collected recently by the Bureau of Fisheries steamer *Albatross.*

ORBIMORPHUS CONSTRICTUS, new species.

Body of adult female ovate, somewhat irregular in outline.

Head large, and with a narrow frontal border. Eyes absent. First pair of antennæ small, composed of three articles, the terminal one being minute. Second pair of antennæ concealed by the mouth parts.

The seven segments of the thorax are distinct. Lateral bosses are present on the first four. Lateral to these are the epimeral plates, which extend the entire length of the lateral margin, and which are larger on one side of the body than on the other. The epimera of the last three segments are also well developed.

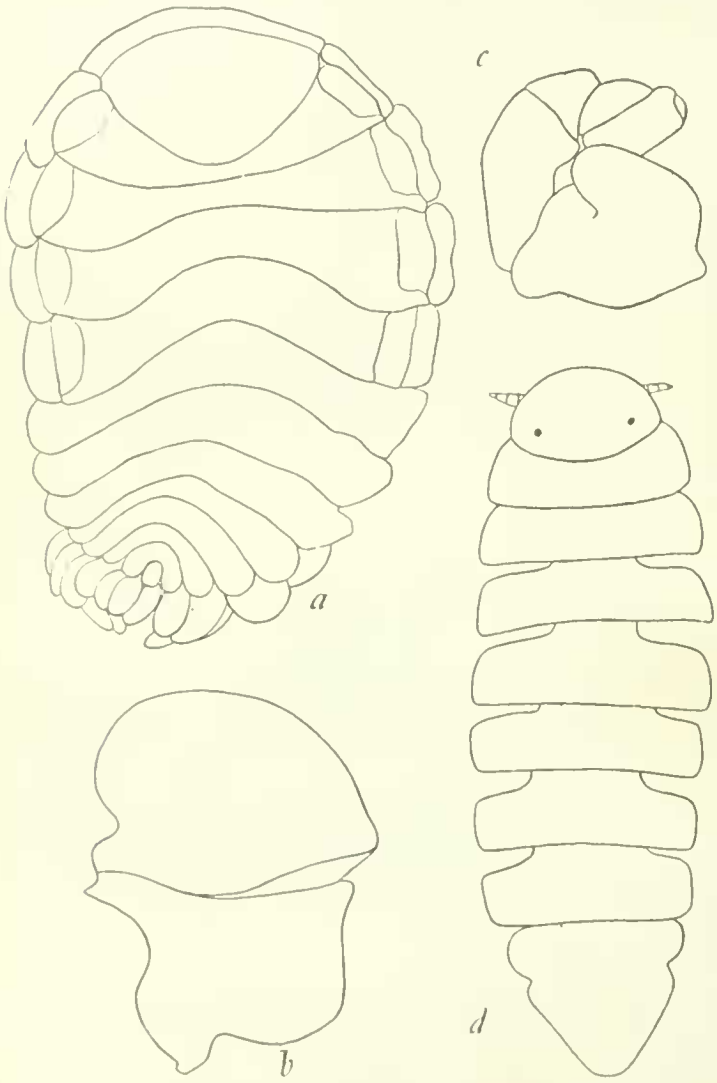

FIG. 5. ORBIMORPHUS CONSTRICTUS. *a*, ADULT FEMALE. × 14½. *b*, FIRST LAMELLA OF MARSUPIUM. × 23. *c*, SEVENTH LEG OF FEMALE. × 41. *d*, MALE. × 41.

The abdomen is composed of five segments, the fifth or terminal segment being small and not provided with pleural plates as are the first four segments. The segments of the abdomen are rather indistinctly defined in the middle of the dorsal region. There are four pairs of double-branched pleopods, the lamellæ being leaf-like. The uropods are a pair of double-branched oval lamellæ, a little shorter than the branches of the pleopods, all of which encircle the abdomen, and project beyond the pleural plates of the abdominal segments. There are seven pairs of prehensile legs, all furnished with a high rounded carina on the basis. There are five pairs of incubatory plates, the first pair having the distal half produced in a small lobe.

The male is narrowly elongate. The head is large, transversely oval. Eyes are small and distinct. All seven segments of the thorax are distinctly defined, with lateral margins not contiguous, but separated by a small indentation. The segments of the abdomen are all united to form a single tapering segment, with posterior extremity

rounded. Near the base on either side is a small notch probably indicating the first fused segment. There are no pleopods or uropods.

One male and one female were collected at Matapalo (near Capon), Peru. They were taken from the branchial cavity of *Petrolisthes armatus* (Gibbes) which was found in oyster beds.

Type-specimen.—Cat. No. 40133, U.S.N.M.

ADDITIONAL ISOPODS KNOWN FROM PERU.

ANILOCRA LÆVIS Miers.

Anilocra lævis Miers, Proc. Zool. Soc. London, 1877, p. 672, pl. 68, fig. 6.

Localities.—Martinique; Peru.

CYMOTHOA ŒSTRUM (Linnæus).

(?) *Oniscus œstrum* Linnæus, Syst. Nat., 12th ed., 1766, p. 1059.—Fabricius, Syst. Ent., 1775, p. 294.

Cymothoa œstrum Fabricius, Syst. Ent., vol. 2, 1793, p. 505. Leach, Trans. Linn. Soc., vol. 11, 1815, p. 372.—Desmarest, Cons. Gén. Crust., 1825, p. 309, pl. 47, figs. 6, 7.—Milne Edwards, Hist. Nat. Crust., vol. 3, 1840, p. 269; Règne Anim. Cuvier (éd. Crochard), Crust., pl. 45, fig. 1.—Spence Bate and Westwood, Hist. Brit. Sessile-eyed Crust., 1868, vol. 2, p. 274, footnote.—Miers, Proc. Zool. Soc. London, 1877, p. 671.—Schiœdte and Meinert, Nat. Tidsskr. (3), vol. 14, 1883, p. 271, pl. 8, figs. 5–6.

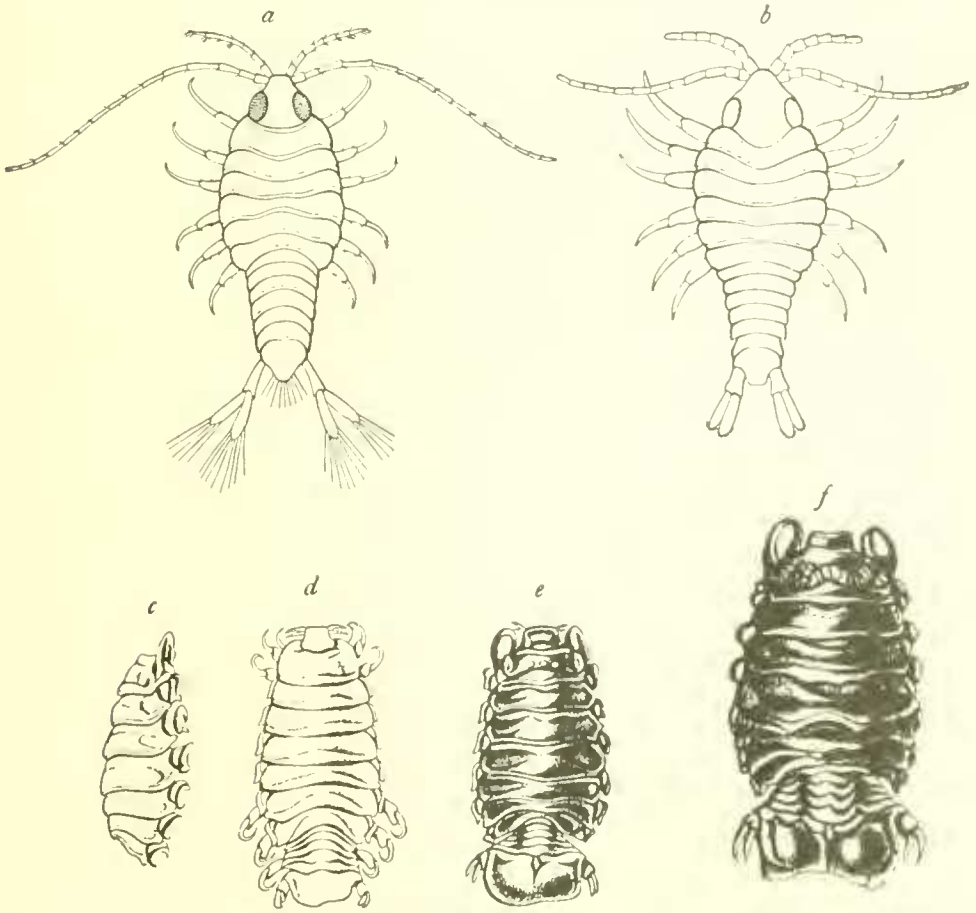

Fig. 6.—Cymothoa œstrum (after Schiœdte and Meinert). *a*, young of the second stage (enlarged). *b*, young of the first stage (enlarged). *c*, lateral view of thorax of adult female (reduced). *d*, adult male (enlarged). *e*, adult female (reduced). *f*, adult female (reduced).

Localities.—Virginia, southward throughout the Gulf of Mexico and Caribbean Sea; Peru (according to Miers). Parasitic on fish.